

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)


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Applicant's or agent's file reference PWO041496	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/US2004/022114	International filing date (day/month/year) 12.07.2004	Priority date (day/month/year) 10.07.2003
International Patent Classification (IPC) or national classification and IPC B65D5/12, B65D3/10		
Applicant MEADWESTVACO CORPORATION et al.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☒ sent to the applicant and to the International Bureau a total of 6 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 10.05.2005	Date of completion of this report 02.08.2005
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Newell, P Telephone No. +31 70 340-3297



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/US2004/022114

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

3-12	as originally filed
1, 2, 2a	received on 29.06.2005 with letter of 29.06.2005

Claims, Numbers

1-10	received on 29.06.2005 with letter of 29.06.2005
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Drawings, Sheets

1/16-16/16	as originally filed
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- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/US2004/022114

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-9
	No: Claims	10
Inventive step (IS)	Yes: Claims	1-9
	No: Claims	10
Industrial applicability (IA)	Yes: Claims	1-10
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following document:

D1: US-A-3913774

2. The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and shows a container having the features of claim 1 of the present application save for additional features whereby there is formed in the wall opposite the first guide assembly a first cavity and whereby there is formed in the wall opposite the second guide assembly a second cavity, the first and second cavities providing clearance respectively for the first and second guide assemblies.

The problem solved by the present invention may be said to be how to achieve a firm attachment between the endcap and the tube end. This problem is solved by the additional features of claim 1. This particular construction is not suggested by the available prior art and hence the subject-matter of claim 1 meets the criteria set out in Article 33(1) PCT.

3. Claims 2-9 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

4. The subject-matter of independent claim 10 does not meet the criteria of Article 33(1) PCT, being not new in the sense of Article 33(2) PCT.

4.1. The document D1 discloses a method for packaging an item comprising all the features of claim 10 and therefore the subject-matter of claim 10 is anticipated by D1.

PRODUCT PACKAGING WITH LATCHING ENDCAP AND METHOD FOR LOADING

BACKGROUND OF THE INVENTION

5 Field of the Invention

The present invention relates generally to improvements in the field of product packaging, and in particular to advantageous aspects of an improved product package with a latching end cap.

Description of the Prior Art

10 One type of product packaging that is currently in use includes a tube, or sleeve, having openings at both ends. The item to be packaged is loaded into the tube, and each end of the tube is sealed by inserting a closely fitting endcap into the opening. A number of different techniques have been developed to hold the endcaps in place, including glue, tape, staples, and the like. However, these techniques suffer from a number of
15 drawbacks, including the amount of labor and materials required to construct the package, the esthetic appearance of the finished package, and the firmness of the attachment between the endcaps and the tube ends.

SUMMARY OF THE INVENTION

20 The above issues, and others, are addressed by the present invention. A container, comprising a tube having a rim at one end defining an opening, and an endcap including a channel that is shaped to receive the tube rim, the tube including at least one latching aperture positioned such that when the tube rim is seated in the channel, the latching aperture is contained within the channel, the endcap further including a latching member
25 that engages the latching aperture when the tube rim is seated in the receiving channel,

the latching member including a surface shaped so as to deflect the tube rim to allow the tube rim to be slid into position over the latching member, the endcap further including a first guide assembly on a first side of the latching member and a second guide assembly on a second side of the latching member, each of the first and second guide assemblies including a surface shaped to deflect the tube rim in a direction opposite to the deflection of the tube rim by the latching member when the tube rim is slid into position in the channel, and to maintain the engagement of the latching aperture by the latching member when the tube rim is seated in the channel, wherein there is formed in the wall opposite the first guide assembly a first cavity and wherein there is formed in the wall opposite the second guide assembly a second cavity the first and second cavities providing clearance respectively for the first and second guide assemblies..

Additional features and advantages of the present invention will become apparent by reference to the following detailed description and accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 shows an exploded perspective view of a package according to a first aspect of the invention, including a tube and a pair of endcaps.

Fig. 2 shows a perspective view of the package shown in Fig. 1, in which the endcaps have been installed onto the tube, and in which the package has been rotated so that the upper endcap points towards the foreground and the lower endcap points towards the background.

Figs. 3, 4 and 5 show, respectively, elevation, top and side views of the package shown in Fig. 1.

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Fig. 6 shows a bottom view of an upper endcap suitable for use in the package shown in Fig. 1.

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I claim:

1. A container, comprising:

a tube having a rim at one end defining an opening, and

5 an endcap including a channel that is shaped to receive the tube rim, the tube including at least one latching aperture positioned such that when the tube rim is seated in the channel, the latching aperture is contained within the channel,

the endcap further including a latching member that engages the latching aperture when the tube rim is seated in the receiving channel, the latching member including a
10 surface shaped so as to deflect the tube rim to allow the tube rim to be slid into position over the latching member,

the endcap further including a first guide assembly on a first side of the latching member and a second guide assembly on a second side of the latching member, each of the first and second guide assemblies including a surface shaped to deflect the tube rim in
15 a direction opposite to the deflection of the tube rim by the latching member when the tube rim is slid into position in the channel, and to maintain the engagement of the latching aperture by the latching member when the tube rim is seated in the channel, wherein there is formed in the wall opposite the first guide assembly a first cavity and wherein there is formed in the wall opposite the second guide assembly a second cavity
20 the first and second cavities providing clearance respectively for the first and second guide assemblies..

2. The container of claim 1, wherein the endcap includes an inner wall and an outer wall, the inner and outer walls extending around the perimeter of the endcap and defining the channel.

5 3. The container of claim 2, wherein the outer wall is taller than the inner wall such that a portion of the outer wall extends beyond the inner wall.

4. The container of claim 2 or claim 3, wherein the latching member extends into the channel from one of the inner and outer walls, and the first and second guide
10 assemblies extend into the channel from the other of the inner and outer walls.

5. The container of any of claims 2 to 4, wherein the latching member extends into the channel from the inner wall, and wherein the first and second guide assemblies extend into the channel from the outer wall.

6. The container of any of the preceding claims, wherein the first and second
15 guide assemblies each include a plurality of guide fins.

7. The container of any of the preceding claims, wherein the first and second guide assemblies include, respectively, first and second sets of guide fins that are substantially parallel to each other, each of the guide fins including a sloped surface shaped to deflect the tube rim in a direction opposite to the deflection of the tube rim by
20 the latching member when the tube rim is slid into position in the channel, and to maintain the engagement of the latching aperture by the latching member when the tube rim is seated in the channel.

8. The container of claim 7, wherein each of the first and second guide fin assemblies includes three guide fins.

9. The container of claim 7 or claim 8, wherein there is formed in the wall opposite the first guide fin assembly a first cavity, and wherein there is formed in the wall opposite the second guide fin assembly a second cavity, the first and second cavities providing clearance, respectively, for the first and second sets of guide fins.

10. A method for packaging a retail item, comprising:

(a) loading the item into a tube having a rim at one end defining an opening, the tube including at least one latching aperture adjacent the rim;

(b) sliding the tube rim into a receiving channel provided in an endcap, the endcap including a latching member that engages the latching aperture when the tube rim is seated in the receiving channel, the latching member including a surface shaped so as to deflect the tube rim to allow the tube rim to be slid into position over the latching member, the endcap further including a first guide assembly on a first side of the latching member and a second guide assembly on a second side of the latching member, each of the first and second guide assemblies including a surface shaped to deflect the tube rim in a direction opposite to the deflection of the tube rim by the latching member when the tube rim is slid into position in the channel, and to maintain the engagement of the latching aperture by the latching member when the tube rim is seated in the channel; and

(c) seating the tube rim in the endcap such that the tube latching aperture is engaged by the latching member.